cMORE, A Tool Using Smart Objects and Intelligent Navigation to Validate the Minimum Common Terminology for Gastrointestinal Endoscopy while Producing Reports

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An electronic medical record requires agreement on a report structure, a useable lexicon, and a physician-computer interface which provides a reward to the physician for using it. Gastrointestinal (GI) endoscopists agree on the structure of an endoscopic report. Agreement on a lexicon (Minimal Common Terminology (MCT)) has been reached, pending prospective testing. This demonstration shows cMORE, a physician interface for evaluating the MCT. cMORE rewards users with a report and a relational database.

GI ENDOSCOPY LEXICONS

The first lexicon to describe GI endoscopy was complete, but too complicated[1]. Although the American Society for Gastrointestinal Endoscopy (ASGE) developed a useable lexicon in the early 1980's, prospective testing of this lexicon was performed at only one site. As a result, the European Society for Gastrointestinal Endoscopy (ESGE) prepared their own usable lexicon and validated it by comparison with 8437 dictated reports in a retrospective study[2]. The ASGE and ESGE held a joint meeting in 1993 to produce a compromise lexicon, the MCT. The societies wish to prospectively evaluate the lexicon and set up a method for maintaining it.

DATABASES

Report generators and databases using the ASGE lexicon are not widely used by endoscopists, because of arcane user interfaces[3], reluctance to use discrete speech recognition[4], and, most recently, the abuse of the graphical user interface (GUI), so that multiple mouse movements and clicks are necessary to enter even the simplest report[5]. Most endoscopists still follow the dictate, transcribe, and review paradigm.

cMORE

cMORE uses an object-oriented approach, Paradox for Windows, and a menu interface. Several key concepts make cMORE useable:

Smart objects

The behavior of each object is influenced by the data that has already been entered. For example, when describing the location of esophagitis, the possible locations include the lower, middle and upper esophagus. However, when describing the location of Barrett's esophagus, the upper boundary and the length are necessary. The location object displays menus based on the finding that is being described.

Intelligent navigation

While a GUI is ideal for correcting mistakes, routine navigation requires mouse movments. cMORE allows complete freedom of movement, but anticipates the logical data entry sequence based on the data already entered. For example, it is important to enter whether a duodenal bulb ulcer is anterior or posterior, so cMORE places the cursor in the subsite field and opens the menu of subsites immediately after the duodenal location is entered. However, it is usually impossible to tell whether a transverse colonic polyp is anterior or posterior. so the subsite field is skipped entirely.

Language independence

The MCT is supported in any of its 14 different languages. Data can be shared between languages.

TESTING

cMORE has been accepted to test the MCT in Europe and the USA. It is being evaluated in Japan.

References

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